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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/579,646	05/26/2000	Katsufumi Nakamura	A0312/7363/RJP	8011

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EXAMINER

GENCO, BRIAN C

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/579,646	Applicant(s) NAKAMURA ET AL.	
	Examiner Brian C. Genco	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2 and 4-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>June 21, 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

Applicant's arguments with respect to claims 1, 9, and 10 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments with regards to the 35 USC 101 rejection presented previously are deemed persuasive. The amendments to the claims also further distinguish the two sets of claims from each other.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 4, 8-14, and 16-18 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 6,529,237 to Tsay et al.).

In regards to claim 1 Tsay discloses a pixel gain amplifier circuit comprising:
an amplifier having an input and an output (e.g., Fig. 2);
an input capacitor, coupled to the input of the amplifier, onto which input capacitor charge from an input pixel is sampled during a first of first and second time phases (e.g., capacitor 50; column 4, lines 16-17 and 32-35 wherein Tsay discloses two time phases through a sampling time phase described on column 3, line 58 – column 4, line 61 and an amplifying time phase as described on column 4, line 62 – column 5, line 39);

a feedback capacitor, coupled between the input and the output of the amplifier, that samples a reference voltage during the first time phase and receives charge from the input capacitor during the second time phase (e.g., capacitor 82 is a feedback capacitor that sample a

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reference voltage during the first time phase as described on column 4, lines 50-53 and receive charge from the input capacitor during the second time phase as described on column 4, lines 62-67 and seen in Fig. 2).

In regards to claim 2 Tsay discloses the pixel gain amplifier circuit as claimed in claim 1 wherein the input capacitor includes a variable capacitor (e.g. column 6, line 4 – column 7, line 28; Figs. 4-6).

In regards to claim 4 Tsay discloses the pixel gain amplifier circuit of claim 2 wherein a capacitance of the input capacitor changes at a rate corresponding to a rate at which pixels are input into the circuit (e.g., Tsay discloses to provide a variable capacitance input capacitor so as to enable a programmable gain function wherein inherent to the device, the gain can be changed for each pixel, i.e., at a rate corresponding to a rate at which pixels are input into the circuit; column 6, lines 4-9).

In regards to claim 8 Tsay discloses the pixel gain amplifier circuit as claimed in claim 1 further comprising an offset correction circuit (e.g., column 5, lines 18-39).

In regards to claim 9 see Examiner's notes on the rejections above. Note that as illustrated in Fig. 6 the gain is varied in response to a gain signal (e.g., column 7, lines 22-28).

In regards to claim 10 see Examiner's notes on the rejections above. Note that the gain is determined by an input capacitor and a feedback capacitor, i.e., capacitors C_f , C_{sp} , and C_{sm} as disclosed on column 6, lines 27-40 and illustrated in Fig. 4.

In regards to claim 11 note that a capacitor array is used as illustrated in Fig. 5.

In regards to claim 12 note that Tsay discloses to provide a variable capacitance input capacitor so as to enable a programmable gain function wherein inherent to the device, the gain

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can be changed for each pixel, i.e., at a rate corresponding to a rate at which pixels are input into the circuit (e.g., column 6, lines 4-9).

In regards to claim 13 Tsay discloses that an input of the offset correction circuit is coupled to the output of the amplifier (e.g., column 5, lines 32-36) and an output of the offset correction circuit is coupled to the input of the amplifier (e.g., column 5, lines 18-19; Fig. 2).

In regards to claims 14 and 16-18 see Examiner's notes on the rejections above.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 5-7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,529,237 to Tsay et al.).

In regards to claim 5 Tsay does not disclose that the feedback capacitor includes a variable capacitor. Examiner notes that according to equation 3 disclosed in column 6 it is functionally equivalent to vary the capacitance of the feedback capacitors C_f in order to effect an adjustment to the gain of the amplifier. As such, it would have been well within the level of one skilled in the art to select to make either the C_{sm} and C_{sp} capacitors or the C_f capacitor variable in order to adjust the gain of the amplifier.

In regards to claim 6 Examiner notes that Tsay disclosed to make capacitors variable through the use of a capacitor array as shown in Fig. 5.

In regards to claim 7 note that Tsay discloses to provide a variable capacitance input capacitor so as to enable a programmable gain function wherein inherent to the device, the gain

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can be changed for each pixel, i.e., at a rate corresponding to a rate at which pixels are input into the circuit (e.g., column 6, lines 4-9).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 571-272-7364 or by fax at 571-273-7364. The examiner can normally be reached on Monday thru Friday 8:30am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Groody can be reached at 571-272-7950. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

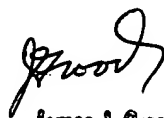
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian C Genco
Examiner
Art Unit 2615

May 9, 2005


James J. Groody
Supervisory Patent Examiner
Art Unit 262-2615